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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>A23L 1/0528, 1/308</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 98/42206</b> <b>(43) International Publication Date:</b> 1 October 1998 (01.10.98)
<b>(21) International Application Number:</b> PCT/IB98/00379 <b>(22) International Filing Date:</b> 18 March 1998 (18.03.98) <b>(30) Priority Data:</b> MI97A000681 25 March 1997 (25.03.97) IT <b>(71) Applicant:</b> SAVAS S.A.S. [IT/IT]; Via Oslavia, 18, I-20134 Milano (IT). <b>(72) Inventor:</b> SENECL, Alessandro; Via Fratelli Cervi - Segrate, Residenza del Parco - Milano 2, I-20100 Milano (IT). <b>(74) Agent:</b> MARSI, Graziella; Con Lor S.p.A., Via Renato Fucini, 5, I-20133 Milano (IT).		<b>(81) Designated States:</b> CA, JP, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report.</i>
<b>(54) Title:</b> EDULCORATING SOLUBLE COMPOSITION CONTAINING ALIMENTARY FIBRES, ITS PREPARATION AND USE FOR ALIMENTARY PURPOSE  <b>(57) Abstract</b>  An edulcorating soluble composition containing at least a gelating alimentary fibre optionally soluble in admixture with other alimentary fibers and one or more sweeteners optionally in admixture among themselves, is therein described.		

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EDULCORATING SOLUBLE COMPOSITION CONTAINING ALIMENTARY  
FIBRES, ITS PREPARATION AND USE FOR ALIMENTARY PURPOSE

DESCRIPTION

The present invention concerns both an edulcorating soluble composition containing alimentary fibres, combined with natural and/or synthetic sweeteners, and its preparation and alimentary use.

It is known that the industrial preparation of aliments refined more and more the food by impoverishing the same of natural alimentary fibres.

This fact increased the appearance of some gastrointestinal and methabolic pathologies which are typical of the modern age.

For this reason, the experts in alimentation have been recommending since some time the daily assumption of vegetables, fruit and wholemeal products which would be able to re-balance the damages caused by the alimentary refining.

However, several people have some difficulties in following these indications, both for wrong eating habits, and for the daily urgent engagements.

On the other hand, the industrial integration of aliments containing alimentary fibres, results hardly

realizable because of the scarce solubility and the gelating phenomena which could occur as said fibres are inserted in food and drinks.

Now, it has been surprisingly found that, thanks to the mixture of appropriate alimentary fibres with sweeteners, it is possible to obtain an edulcorating soluble composition containing fibres, which can be used for the softening of the substances to be swallowed and at the same time for integrating food and drinks both warm and cold with fibres, without, however, presenting gelating and/or insolubility phenomena.

The scope of the present invention is therefore an edulcorating composition soluble containing at least an alimentary fibre non gelating soluble if necessary in mixture with other alimentary fibres chosen among the gelating alimentary fibres soluble, insoluble or partially soluble, and one or more sweeteners if necessary in mixture among themselves.

The alimentary fibres are substances non assimilable of vegetal origin deriving either from the stem, or from the leaves or from the seeds of particular plants.

The fibres commonly commercialized have a chemical composition constituted for the greatest part by

cellulose and therefore by pectine substances, fats and waxes, present in the plant, and by a woody tissue particularly abundant in the fibre of the leaf.

The fibres which can be used in the present invention are those normally used in the dietetic-alimentary field, for example: the soluble fibres non gelating as inulin, fibre of chicory, fibre of acacia and similar; the soluble fibres gelating as pectin, agar-agar, karaja gum, guar gum, glucomannan, carob, seeds of carob, fibres insoluble or partially soluble as pea, beetroot, apple, oat, wheat, maize, soy, cacao, barley, carob, seeds of carob, hazelnut and fibres in general of vegetables, citrus fruits and cereals (lemon, orange, bean).

Particularly, in the present invention the use alimentary fibres soluble non gelating, if necessary in mixture among themselves is preferred.

In the composition of the present invention said fibres are therefore suitably mixed with some edulcorants or sweeteners, that is, substances having a taste more or less sweet. Among these, there are substances belonging to chemical classes very different and heterogeneous. Commonly, the edulcorants are divided into two fundamental groups: natural edulcorants and synthetic edulcorants.

The fundamental difference between the edulcorants of the two classes is represented by the fact that while the natural edulcorants constitute an excellent biological fuel and therefore they produce calories, the synthetic edulcorants do not produce calories and so can be used even where, for pathological reasons or for other reasons, the alimentary use of saccharose (and of polysaccharides which release glucose in the metabolism process) is contraindicated and has to be limited.

In the composition of the present invention are used as synthetic sweeteners: acesulfame K, aspartame, cyclamic acid and its salts of sodium and calcium, saccharin and its salts of sodium, potassium and calcium, thaumatococine, neohesperidine DC; as natural sweeteners it is possible to use the polyhydric alcohol, among which there are first of all those related to glucosides as, for example, sorbitol or different glucosides, as saccharose (cane sugar, beet sugar), considered the natural sweetener par excellence, glucose, fructose, invert sugar, dextrose. Particularly, in the composition of the present invention the fibres are present in an amount of about 30-99% in weight of which at least about 50% formed by soluble fibres non gelating; while the synthetic

sweeteners could be present in amounts variable between about 0,5-5% of the weight of the fibres used and the natural sweeteners could be added in measure of about 1-20% of the weight of the fibre.

Another purpose of the present invention is constituted by a process for the preparation of said edulcorating composition.

Said process consists in mixing, in a suitable mixer for powders, (with screw, with four-ways, with square shaft or other) a suitable amount of fibre in powder, previously sieved, with a suitable amount of sweetener.

The mixer is set in motion and left in motion until when the distribution of the sweetener in the fibre is perfectly homogeneous. If necessary, the mixture is treated with steam for obtaining its instantanizing.

For its alimentary use, the composition of the present invention could be administrated orally in a formulation containing the same if necessary with conventional excipients non toxic.

The alimentary compositions suitable for the orally administration could be for example tablets, powders or pellets that can be dispersed, hard or soft capsules. Said compositions could contain one or more colouring, flavouring agents, suitable for making the

alimentary composition elegant and agreeable.

The formulations for the orally use include tablets in which the edulcorating composition is mixed with non toxic excipients. Said excipients could be inert diluents, as lactose, calcium phosphate or sodium phosphate; granulating or disintegrating agents, as wheat starch or alginic acid, polyvinyl pyrrolidone; binding agents as starch or gelatins, cellulose and derivatives; lubricating agents as magnesium stearate, stearic acid, magnesium salts, sodium and calcium of the stearic acid and hydrogenated vegetal salts or talcum powder.

The tablets could be covered or non-covered with conventional technologies for an expert in the art.

The powders and the dispersing granulates suitable for the preparation of a water suspension by addition of water can contain the edulcorating composition in a mixture with suitable additions of a disintegrating agent as starch, polyvinyl pyrrolidone, hydrogenated starch, and of a lubricating agent as magnesium stearate, calcium stearate and sodium stearate, hydrogenated vegetal fats.

Said mixture can be compressed if necessary in tablets which will constitute the units of use of the sweetener by the consumer.



For a better illustration of the present invention, hereinafter are the examples which are in no way limitative of the same.

#### Exemple 1

Inulin	62,4%
Maltodestrine	26 %
Mannitol	6%
Reticulate Polyvinyl Pyrrolidone	3%
Magnesium Stearate	1 %
Saccharin	0,9%
acesulfame K	0,6%
Flavourings	0,1%

%= weight percentage.

In a mixer with screw for powders are filled the fibre in powder previously sieved and the sweetener. The mixer is set in motion and left in motion until when the distribution of the sweetener in the fibre is perfectly homogeneous. The mixture as obtained can be used as such or can be submitted to a damp or dry granulation process, or to a process of

instantanizing.

### Exemple 2

The same procedure of Exemple 1 but with the use of the following edulcorating composition:

Inulin	60%
Maltodestrine	31,35%
Mannitol	7,2%
Acesulfame k	0,75%
Aspartame	0,6%
Flavourings	0,1%

%= weight percentage.

### Exemple 3

The same procedure of Exemple 1 but with the use of the following edulcorating composition

Sorbitolo	40,4%
Inulin	15,95%
Fibre beetroot	15,95%
Saccharose	13,95%

Destrose	10,95%
Sucro ester	1%
Glucomannan	1%
Aspartame	0,6%
Flavouring	0,2%

%= weight percentage.

#### Exemple 4

Inulin	62,4%
Maltodestrine	26 %
Mannitol	6 %
Reticulate Polyvinyl pyrrolidone	3 %
Magnesium Stearate	1 %
Saccharin	0.9%
Acesulfame k	0.6%
Flavourings	0.1%

%= weight percentage.

The composition thus obtained, is compressed with compressor Ronchi R18 equiped with square punches 15x15.

In this way 1,2 gr tablets are obtained.

## CLAIMS

1. An edulcorating soluble composition characterized by the fact that it contains at least a non gelating alimentary fibre optionally soluble in admixture with other alimentary fibres chosen among the group of gelating alimentary fibres soluble, insoluble or partially soluble, and one or more sweeteners optionally in admixture among themselves.
2. A composition according to claim 1, characterized by the fact that it contains inulin as non gelating soluble alimentary fibre.
3. A composition according to claim 1 or 2, characterized by the fact that it contains at least a synthetic sweetener.
4. A composition according to claim 1 or 2, characterized by the fact that it contains at least a natural sweetener.
5. A composition according to one of the claims 1 to 4, characterized by the fact that the fibres are present in an amount of about 30-99% in weight, of which at least 50% formed by non gelating soluble fibres; the synthetic sweeteners are present in an amount of about 0,5-5% of the weight of the fibres and the natural sweeteners are present in an amount of about 1-20% of the weight of the fibres.

6. A process for the preparation of a composition according to anyone of the claims 1 to 5, characterized by the fact that the alimentary fibre previously sieved and one or more sweeteners are set in a mixer for powders and mixed homogeneously; excipients, flavourings, dyes, dispersing agents and lubricants are optionally added to the mixture obtained.

7. An edulcorating composition prepared according to the process of claim 6, characterized by the fact that it is in the technical form of soluble powder.

8. An edulcorating composition prepared according to the process of claim 6, characterized by the fact that it is in the technical form of granulate.

9. An edulcorating composition prepared according to the process of claim 6, characterized by the fact that it is in the technical form of tablet.

10. Use of an edulcorating composition according to one of the claims 1 to 5 and 7 to 9 for the sweetening of aliments.

# INTERNATIONAL SEARCH REPORT

Int. l. Application No

PCT/IB 98/00379

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 A23L1/0528 A23L1/308

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A23L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 420 728 A (SOFALIA) 3 April 1991 see abstract see page 3, line 56 - line 57 see page 4, line 26 - line 31 see examples 1,2	1,3,5-7, 10
X	WO 95 06417 A (SANACARE APS ET AL.) 9 March 1995 see examples 1-6	1,3,5,6, 8,10
X	WO 90 12117 A (BRITISH SUGAR PLC ET AL.) 18 October 1990 see page 4, line 4 - line 16 see page 4, line 36 - line 37	1,4,7,10
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

22 June 1998

Date of mailing of the international search report

29/06/1998

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# INTERNATIONAL SEARCH REPORT

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PCT/IB 98/00379

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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A	DE 195 14 274 A (KRÜGER GMBH) 24 October 1996 see the whole document	
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Information on patent family members

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